How to Design (Step 2 of the Permagarden Process)

WHAT IS IT?

A permagarden design is a context specific plan for improving garden productivity by creating an environment that meets the needs of the plants in the garden.

WHY DO WE DO IT?

Having a context specific design is one of the Minimum Standards for a permagarden (more information about the Minimum Standards can be found in the Permagarden Technical Checklist Guidance). Creating a design helps ensure that available resources are being used efficiently, the basic needs of the plants are being met, and that the garden works for the specific environmental context of the compound.

TERMS USED

Design: A permagarden design is a plan for improving garden productivity by creating an environment that meets the needs of the plants in the garden. A permagarden design works with the existing landscape, structures and external influences present on the site and optimizes the use of locally available resources.

The design process includes the following steps (outlined in more detail below):

1. Analysis of observation data
2. Creation of a design map

Design (Step 2)

METHOD

1. Analysis of observation data

Together with the participants analyze the data from the observation process using the following questions:

- *How can the resources we identified be used to meet the basic needs of the plants in the permagarden?*

- *How much labor is required to use these resources and are there ways to reduce this burden? How can we reduce the workload to maintain the garden for household members who do the most work?*

- *Is the slope stealing our water and nutrients by moving them downhill, away from our garden? What do we need to do to bring water and nutrients to the garden and store them there for future use?*

- *Are the other external influences we identified helping or harming the plants in the garden? How can we ensure we adequately protect our garden and turn challenges into solutions?*

- *Where should we place garden elements in our compound to use resources most efficiently? Are there unused spaces that can be used to increase production?*

2. Creation of a design map

After the analysis of data, hand out paper to participants to do the design. The design can either be added to the existing map of the compound (developed in the "How to: Observe" document available in the supplemental materials on the Permagarden course webpage) or, if there is not enough space on this map, the map of the compound can be kept next to the design map to ensure the design works with the landscape and takes the external influences present on the site into consideration.

If there is no paper, the design can be drawn on the ground.

To identify the best location for the Permagarden beds, ensure the plot:

- Receives at least 4 hours of sunlight a day
- Is located near the kitchen
- Is linked to rainwater harvesting structures within the compound
- Is protected from extreme winds, livestock, or other damaging elements
- Is close to a source of nutrients to fertilize the growing beds

In addition, there are many external influences that may affect the garden, such as the intensity of the sun throughout the day or the slope of the land. Additional considerations when selecting a garden site include:

- Choosing a site with partial shade in hotter climates to limit exposure to intense afternoon sun.
- Placing the garden downslope from a chicken coop or kraal (while still protecting the garden from animals) to allow the slope to bring manure and nutrients into the garden during a rain.
- Placing the garden away from the trash pit or other hazardous materials.

2. Creation of a design map

A design map should feature the following
key elements:

- Garden beds (on contour)
- Water harvesting structures:
  » Protective swale for the garden beds (upslope from the garden beds).
  » Possible additional swales, for example at the top of the site to add extra protection and at the bottom of the site to act as a 'sink.'
  » Other water harvesting structures, such as half moon berms, or wastewater management techniques, such as mulch basins.
  » Spillways to ensure overflow can be managed.
- Composting areas
- Protection for plants:
  » Shade structures
  » Trees or other protective barriers for shade and windbreak
  » Fencing around mulch basins and garden beds
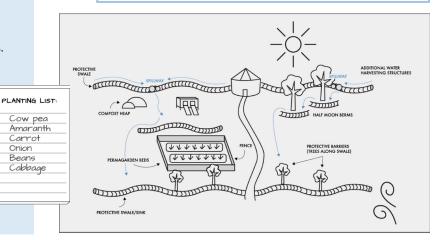- Planting list based on the needs of the household

NOTE
Encourage participants to choose the crops they prefer for the permagarden beds. Projects focused on food and nutrition security often encourage farmers to grow a standard set of crops. When farmers are allowed to choose what they would like to grow, they often select a different set of crops. Farmers like to choose plants they know how to grow and that they know will not create extra problems for them if they have to buy seeds in the future or figure out how to sell any surplus they have.

To identify the best plants to be grown to meet household needs, discuss what plants can provide the household with:

- Something to eat or sell throughout the year, including the lean or dry season. Consider:
  » Crops that can grow in the dry season
  » Crops that can be processed, dried or stored
  » Perennial crops that can give stability over time, such as fruit trees
- Fencing material to protect growing areas
- Medicine
- Fodder for animals (if they have any)
- Mulching materials
- Shade from the afternoon sun for sensitive crops
- Food for pollinators
- A source of plant nutrients that can be added to the compost pile or dug into garden beds (such as tithonia)
- Pest control

When selecting plants for these different categories, also take into consideration plants that can meet several different needs, for example a moringa tree whose leaves, branches, and seeds can be used as mulch, fodder, or consumed as a vegetable.

PLANTING LIST:
Cow pea
Amaranth
Carrot
Onion
Beans
Cabbage